

Annals of Plastic Surgery

Volume 29 / July–December 1992

Editor in Chief

William D. Morain, MD

Founding Editor

Richard B. Stark, MD

Editor Emeritus

Lars M. Vistnes, MD

Associate Editors

Edgar Biemer, MD
Munich, Germany

Gregory M. Buncke, MD
San Francisco, California

John Coleman III, MD
Indianapolis, Indiana

Lawrence B. Colen, MD
Norfolk, Virginia

Mark B. Constantian, MD
Nashua, New Hampshire

G. Gregory Gallico III, MD
Boston, Massachusetts

Takao Harashina, MD
Saitama, Japan

Vincent R. Hentz, MD
Stanford, California

William C. Lineaweaver, MD
San Francisco, California

Ernest K. Manders, MD
Hershey, Pennsylvania

Raymond F. Morgan, MD
Charlottesville, Virginia

Larry S. Nichter, MD
Los Angeles, California

Robert M. Oneal, MD
Ann Arbor, Michigan

Linda G. Phillips, MD
Galveston, Texas

Jeffrey C. Posnick, DMD, MD
Washington, DC

David J. Smith, Jr, MD
Ann Arbor, Michigan

Scott L. Spear, MD
Washington, DC

William C. Trier, MD
Seattle, Washington

Editorial Board Consultants

Bernice Z. Brown, MD
Los Angeles, California
Ophthalmology

Charles Krause, MD
Ann Arbor, Michigan
Otolaryngology/ Head and Neck
Surgery

Moise L. Levy, MD
Houston, Texas
Dermatology

Editorial Assistant

Stephanie Hampton
Lebanon, New Hampshire

Publisher

Little, Brown and Company
Boston, Massachusetts

Publishing Staff

Nancy E. Chorprenning
Editor in Chief

David Dionne
Executive Editor

Sherri Frank
Managing Editor

Tracey Solon
Assistant Managing Editor

Fredda Purgalin
Production Manager

Anne Orens
Sales and Marketing Manager

DISCLAIMER

Advertisements in *Annals of Plastic Surgery* for products, services, courses, and symposia are published with a "caveat emptor—buyer beware" understanding. The Publisher, the Editor, and individual members of the Editorial Board do not imply warranty of products, nor quality, validity, or approval of the educational material offered by such advertisements.

Annals of Plastic Surgery. ISSN 0148-7043. Published monthly by Little, Brown and Company, 34 Beacon Street, Boston MA 02108-1493. Send address changes and subscription orders to Little, Brown and Company, Subscription Department, 34 Beacon Street, Boston, MA 02108-1493. Subscription rates per year: Personal subscription, U.S. and possessions, \$127.00; foreign (includes Mexico), \$194.00; Canada, \$147.00. PLEASE ADD 7% CANADIAN GST FOR ALL CANADIAN SUBSCRIPTIONS (Registration No.: R128537917); institutional, U.S., \$172.00; foreign, \$236.00; Canada, \$194.00. Special rates for students, interns, and residents per year: U.S., \$79.00; foreign, \$121.00; Canada, \$92.00. Single copies \$15.00 prepaid. In JAPAN: Please contact our exclusive agent: MEDSL 1-2-13 Yushima, Bunkyo-ku, Tokyo 113, Japan. Subscription rates per year: individual, ¥ 39,800; institutional, ¥ 48,400 (air cargo service only). Bound Volumes: Nos. 28 and 29 will be available in 1992. Contact publisher for more information. Second-class postage paid at Boston, MA, and at additional mailing offices. POSTMASTER: Send address changes to *Annals of Plastic Surgery*, 34 Beacon Street, Boston, MA 02108-1493.

Copyright © 1992 by Little, Brown and Company (Inc.) All right reserved. Except as authorized in the accompanying statement, no part of *Annals of Plastic Surgery* may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without the publisher's written permission. Authorization to photocopy items for internal use, or the internal or personal use of specific clients, is granted by Little, Brown and Company, Inc., for libraries and other users registered with the Copyright Clearance Center Transactional Reporting Service, provided that the per-copy fee of \$3.00 is paid directly to the Copyright Clearance Center, 27 Congress St., Salem, MA 01970, for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. The code fee for this journal is 0148-7043/92 \$3.00. This authorization does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale.

Annals of Plastic Surgery is indexed in Index Medicus, Current Contents/Clinical Practice, Excerpta Medica, Biological Abstracts, Biosis, and Current Awareness in Biological Sciences.

Message from Incoming Editor

1 About Face

William D. Morain, MD

Original Articles

2 Membranous Bone Lengthening: A Serial Histological Study

The Ilizarov technique was successfully applied in 10 dogs for mandibular lengthening. The histological findings in this membranous bone model parallel those previously observed in long bones.

Nolan S. Karp, MD
Joseph G. McCarthy, MD
Jonathan S. Schreiber, MD
Hubert A. Sissons, MD
Charles H. M. Thorne, MD

8 Verification of the Pressure Provocative Test in Carpal Tunnel Syndrome

The pressure provocative test, wherein the examiner's thumb presses directly onto the median nerve at the wrist, was shown to be more specific and rapid in diagnosing carpal tunnel syndrome than either Phalen's test or Tinel's sign.

Tara M. Williams, MD
Susan E. Mackinnon, MD, FRCS(C),
FACS
Christine B. Novak, BSc(Kin), BSc(PT)
Steven McCabe, MD, FRCS(C)
Louise Kelly, BSc, OT(C)

12 Free Thin Paraumbilical Perforator-based Flaps

Thirteen thin anterior abdominal free flaps up to 15 × 25 cm were successfully transferred to the face, scalp, and foot. Each was based solely on the dominant periumbilical perforator that supplies the TRAM flap and was transferred without muscle.

Isao Koshima, MD
Takahiko Moriguchi, MD
Shugo Soeda, MD
Hitoshi Tanaka, MD
Naoto Umeda, MD

18 Abdominoplasty Combined with Other Intraabdominal Procedures

A total of 103 patients underwent abdominoplasty combined with tubal ligation, hysterectomy, or cholecystectomy. Only 2 minor wound complications were noted.

Rolf Gemperli, MD
Rogerio Izar Neves, MD
Paulo Tuma, Jr, MD
Giselda Tardin Bonamichi, MD
Marcus Castro Ferreira, MD
Ernest K. Manders, MD

23 Improving the Acute Nasolabial Angle and Medial Nasolabial Fold by Levator Alae Muscle Resection

Aging changes in the nasolabial fold and nasolabial angle were improved by resection of the levator alae muscles via a subciliary incision. Fresh cadaver dissections and 10 clinical cases are reported.

Joel E. Pessa, MD

31 Stereotactic Localization for Fine Needle Aspiration Biopsy in Patients with Augmentation Prostheses

In 15 augmentation mammoplasty patients with mammographically demonstrated nonpalpable lesions, 4 suspicious regions were correctly diagnosed as carcinoma through fine needle aspiration biopsy via stereotactic localization. No prostheses were punctured, and patients with benign lesions continue mammographic follow-up.

Julie S. Mitnick, MD
Madeline F. Vazquez, MD
Daniel F. Roses, MD
Matthew N. Harris, MD
Stephen R. Colen, MD
Helen S. Colen, MD

- 36 **Tissue Expansion in the Extremities Using External Reservoirs, with Invited Comment by Allen L. Van Beek, MD, FACS**

Twelve upper extremity and 21 lower extremity tissue expansion procedures are reported, each using externalized injection ports. Although thigh and upper extremity procedures were largely successful, 70% of procedures in the lower leg and foot required premature expander removal.

N. Bradly Meland, MD
Scott J. Loessin, MD
Daniel Thimsen, MD
Ian T. Jackson, MD
- 41 **Heterotopic Ossification as a Complication of the Staged Total Thigh Muscles Flap in Spinal Cord Injury Patients**

Fifteen 2-stage total thigh flaps were performed for advanced pressure ulcers in spinal cord injury patients. Eleven of the 15 developed heterotopic ossification in the thigh muscles during the 1- to 3-week interval between the 2 stages, an unexpectedly rapid onset.

Salah Rubayi, MD, FACS
Milind K. Ambe, MD
Douglas E. Garland, MD
Daniel Capen, MD
- 47 **Biochemical Study on the Process of Skin Graft Take**

A study of skin grafts in 250 rats demonstrated rapid decreases of graft ATP and glucose levels into the 2nd and 3rd postoperative days. Increases in levels of both thereafter appeared to result from revascularization.

Michiya Hira, MD
Sadao Tajima, MD
- 55 **The Universal Nose of Early Childhood: Nature's Aid in Understanding the Supratip Deformity and Its Correction, with Invited Comment by George C. Peck, MD, FACS**

The author observes that the nose of early childhood resembles the postrhinoplastic nose where the dorsum has been overresected.

George Labrakis, MD
- 58 **The Influence of Diabetes on Free Flap Transfer: I. Flap Survival and Microvascular Healing**

Free groin flaps were transferred between syngeneic normal rats and streptozotocin-induced diabetic rats. Although reendothelialization at anastomosis proceeded faster in normal animals, no differences were noted between diabetic and normal groups in flap survival, vascular patency, histology, ultrastructure, or corrosion casts.

Brian C. Cooley
Douglas P. Hanel, MD
Robert B. Anderson, MD
Mark D. Foster, MD
John S. Gould, MD
- 65 **The Influence of Diabetes on Free Flap Transfer: II. The Effect of Ischemia on Flap Survival**

Free groin and muscle flaps were transferred from streptozotocin-induced diabetic rats to syngeneic normal rats after various ischemic flap storage periods. No difference in flap survival was seen after seven days when compared with flaps transferred from normal rats, suggesting that the vascular changes of diabetes mellitus are not sufficient to compromise free flap transfer.

Brian C. Cooley
Douglas P. Hanel, MD
Ma Lan, MD
Xiaolu Li, MD
John S. Gould, MD

Case Reports

- | | | |
|----|---|---|
| 70 | Clinical Application of the Adipofascial Turnover Flap in the Leg and Ankle | Chung-Sheng Lai, MD
Sin-Daw Lin, MD
Chih-Kang Chou, MD |
| 76 | Reconstruction of the Distal Foot Dorsum with a Distally Based Extensor Digitorum Brevis Muscle Flap | Sotaro Kurata, MD
Hiroyuki Hashimoto, MD
Hiroto Terashi, MD
Tomohito Honda, MD
Susumu Takayasu, MD |
| 80 | Transinterosseous Transfer of a Peroneal Island Flap for Reconstruction of Prepatellar Skin Defect: Report of Two Patients | Rie Yoshikata, MD
Akira Yanai, MD
Kenichi Tsuzuki, MD
Yukihiro Bando, MD
Yasuo Yamauchi, MD
Koichi Kusunose, MD
Takaaki Tsuji, MD |
| 86 | Massive Extravasation of Traumatically Ruptured Buttock Silicone Prosthesis | Ronald D. Ford, MD
William D. Simpson, MD |
| 89 | Congenital Alveolar Adhesions | Masaru Itoh, MD
Tsuyoshi Takato, MD
Susam Park, MD
Yukie Kitano, MD
Ichiko Kitano, BA |

Book Reviews

- | | | |
|----|--|---------------------------|
| 92 | <i>Aesthetic Contouring of the Craniofacial Skeleton</i> , edited by Douglas K. Ousterhout, DDS, MD | Jeffrey Posnick, DMD, MD |
| 93 | <i>The Patient and the Plastic Surgeon, Second Edition</i> , by Robert M. Goldwyn, MD | Lars M. Vistnes, MD |
| 93 | <i>Sexual Rehabilitation of the Spinal Cord-Injured Patient</i> , edited by J. F. J. Leyson, MD | Inder Perkash, MD |
| 94 | <i>Why Not Say It Clearly? Second Edition</i> , by Lester S. King, MD | Lars M. Vistnes, MD |
| 94 | <i>Body Images: Development, Deviance and Change</i> , edited by Thomas F. Cash and Thomas Pruzinsky | Carolyn J. Cline, MD, PhD |
| 95 | <i>Diseases of the Nose, Throat, Ear, Head and Neck, 14th Edition</i> , edited by John Jacob Ballenger | David Arnstein, MD |
| 95 | <i>Sabiston's Textbook of Surgery, 14th Edition</i> , edited by David C. Sabiston, Jr, MD | Mark Vierra, MD |

Number 2 / August 1992

Original Articles

- 97 **Reconstruction of Large Infected Tibia Defects, with Invited Comment by George Cierny III, MD, and Foad Nahai, MD** Kestutis Vitkus, MD, PhD
Mecislovas Vitkus, MD
- Twenty-nine late-infected grade III B, C tibial fractures were managed with a free skin or muscle flap followed 6 to 12 weeks later by a vascularized bone transfer. All but 1 developed closed wounds with bony union, although 7 required a secondary cancellous bone graft.
- 109 **Computed Tomography Versus Standard Radiography in the Assessment of Fractures of the Mandible** Craig N. Creasman, MD
Bernard L. Markowitz, MD
Henry K. Kawamoto, Jr, MD, DDS
Steven Cohen, MD
Farhad Kioumehri, MD
William N. Hanafee, MD
William W. Shaw, MD
- Plain films have a higher sensitivity than CT scans in diagnosing mandibular fractures, especially with nondisplaced fractures in the posterior portion.
- 114 **Advantages of the Postauricular Coronal Incision** Jeffrey C. Posnick, DMD, MD
Jeffrey A. Goldstein, MD
Cameron Clokie, DDS
- A postauricular extension of the bicoronal incision is advantageous over the preauricular extension because it eliminates preauricular sensory loss, preserves the temporoparietal fascia, diminishes the risk of facial nerve injury, and minimizes scar deformities.
- 117 **Zones of the Lower Transverse Rectus Abdominis Musculocutaneous Flap Based on Laser Doppler Flowmetry** Geoffrey G. Hallock, MD
- Laser Doppler flowmetry was used to assess cutaneous perfusion on the 4 zones of 15 unipedicle TRAM flaps. In contrast to accepted teachings, the lateral ipsilateral quadrant was found to be better perfused than the medial contralateral quadrant.
- 122 **Assessment of TRAM Flap Perfusion Using Laser Doppler Flowmetry: An Adjunct to Microvascular Augmentation** Geoffrey G. Hallock, MD
John A. Altobelli, MD
- Sixteen consecutive TRAM flaps were monitored intraoperatively and postoperatively using laser Doppler flowmetry. On the operating table the method correctly predicted the need for supercharging in 2 cases and partial excision in 1.
- 128 **Secondary Rhytidoplasty** Claudio Cardoso de Castro, MD, FACS
Laci Braga, MD
- Nineteen secondary rhytidoplasties are reviewed, with emphasis on indications, technical features, and limitations.

- 136 **The Viability of Revascularized Calvarial Bone Graft in a Pig Model**
Using 9 pigs, the fate of free calvarial bone grafts was compared with calvarial bone flaps both with and without prior periosteal stripping. Whereas free bone grafts underwent substantial fibrosis and resorption, there was no difference between bone flaps raised with undisturbed pedicles and those flaps whose galeal/periosteal pedicles had been detached 4 weeks previously.

Keizo Fukuta, MD
Yaron Har-Shai, MD
Marcus V. Collares, MD
Barry R. Herschman, MD
Richard J. Persiani, DDS
Ian T. Jackson, MD, FRCS, FACS,
FRACS(Hon)

- 143 **Percutaneous Photocoagulation of Deep Vascular Lesions Using a Fiberoptic Laser Wand**
Eleven hemangiomas and 2 lymphangiomas responded favorably to laser coagulation administered percutaneously via a fiberoptic wand. No major complications occurred, and improvement was long lasting.

Hashim M. Alani, MD, FRCSE, FACS
Ronald M. Warren, MD

- Case Reports**

- 149 **Extended Latissimus Dorsi Musculocutaneous Flaps for Extremely Wide Cervical Skin Defects Involving the Cervical Esophagus**
Massive cervico–esophageal defects may be reconstructed in one stage with a double-paddle latissimus dorsi musculocutaneous flap. The inferiorly extended distal paddle is tubed as a neoesophagus, and the anteriorly extended proximal paddle provides wide skin coverage.

Isao Koshima, MD
Takahiko Moriguchi, MD
Shugo Soeda, MD
Hidekazu Yamamoto, MD
Yozo Orita, MD
Akira Hara, MD

- 153 **Massive Pharyngocutaneous Fistulae: Salvage with Two-Layer Flap Closure**
Two massive postoperative pharyngocutaneous fistulae were repaired with double flap coverage using jejunal and radial forearm free flaps for lining and pectoralis major flaps for external coverage.

B. G. Peat, MB, ChB, FRACS
J. B. Boyd, MB, MD, FRCS, FRCSC,
FACS
P. J. Gullane, MD, FRCSC, FACS

- 157 **Upper Extremity Aneurysm in Infants**
A false aneurysm of the brachial artery and a true aneurysm of a common digital artery in infants were repaired with reanastomosis and simple excision, respectively.

Masaru Itoh, MD
Tsuyoshi Takato, MD
Michio Yokota, MD

- 161 **A True Aneurysm of a Collateral Branch of a Proper Digital Artery**
The first known case of a true aneurysm of a collateral branch of a proper digital artery was treated by resection.

Philip Trabulsy, MD
David W. Leitner, MD

- 164 **Cleft Lip Repair by Soft-Tissue Expansion, with Invited Comment by Gordon H. Sasaki, MD, FACS**
Three patients with secondary unilateral and bilateral cleft lip deformities underwent lip revision by tissue expansion of the cheek and lip–cheek advancement flap.

Nobuyuki Sagehashi, MD

- 170 Long-term Follow-up on the Use of Soft-Tissue Expansion for Shoulder Reconstruction**
- A 20-year-old woman underwent forequarter amputation and subsequent upper chest wall resection with partial lobectomy for fibrosarcoma with immediate inflation of a tissue expander to 600 ml for a shoulder mound. Following postoperative irradiation to 50 grays she is well, with acceptable cosmesis 8 years after expander placement.
- Susan E. Mackinnon, MD, FRCS(C),
FACS
G. Alexander Patterson, MD, FRCS(C),
FACS

- 173 Adipofascial (Anterior Rectus Sheath) Flaps for Breast Reconstruction**
- Superiorly based turnover flaps of anterior rectus fascia and overlying fat were transposed for breast-mound reconstruction after bilateral subcutaneous mastectomy in 7 patients.
- Shigemi Sakai, MD
Izuru Suzuki, MD
Hirokazu Izawa, MD

- 178 Functional Reconstruction for Severe Postburn Microstomia**
- A refractory postburn microstomia was successfully treated with a three-stage approach using bilateral temporalis muscle transfers, a parascapular free flap to lower lip and neck, and a vestibuloplasty.
- Gregory S. La Trenta, MD
Robert T. Grant, MD
Randal D. Haworth, MD
Michael Madden, MD
Lloyd A. Hoffman, MD

Short Subjects

- 182 The Use of a Contained Breathing Apparatus to Isolate the Operator and Assistant for Aerosolizing Procedures Including Dermabrasion and Laser Surgery**
- An electrically operated air compressor designed for underwater use can protect operating room personnel from oronasal contact with patients' body fluids.
- Paul J. Weber, MD
Allan E. Wulc, MD

- 185 A Simple Splinting Device for Skin Grafts of the Penis**
- A hollow cylinder of plaster-cast material provides the basis for a safe and simple splint for the skin-grafted penis.
- Yitzhak Lippin, MD
Aviho Shvoron, MD
Haggai Tsur, MD

Editorial

- 187 The Power and the Breast Implant**
- William D. Morain, MD

Letters

- 189 Re: Recertification**
- Geoffrey G. Hallock, MD
- 190 Re: Antiseptic Effectiveness with Fibroblast Preservation**
- William C. Lineaweaver, MD
- 191 Reply**
- Peter J. McKenna, MD

Book Reviews

- | | | |
|-----|---|----------------------|
| 191 | <i>Aesthetic Rhinoplasty</i> , by Gilbert Aiache, MD, and Jacques Levignac, MD | Ronald D. Gruber, MD |
| 192 | <i>Atlas of Breast Reconstruction</i> , by Luis Vasconez, MD, Madeleine LeJour, MD, and Mabel Gamboa-Bobadilla, MD | Linda M. Waters, MD |

Number 3 / September 1992

Original Articles

- | | | |
|-----|---|--|
| 193 | Recombinant Human Platelet-derived Growth Factor-BB for the Treatment of Chronic Pressure Ulcers

<i>A randomized, double-blind, placebo-controlled study of 20 patients treated with recombinant human platelet-derived growth factor-BB demonstrated a marked healing response at a dose of 100 µg/ml, compared with placebo-treated patients.</i> | Martin C. Robson, MD
Linda G. Phillips, MD
Arlen Thomason, PhD
et al |
| 202 | The Effect of Occlusion on the Survival of an Isolated Dorsal Skin Flap in the Rat

<i>The McFarlane random dorsal rat flap was modified by closing the entirety of the flap bed to prevent revascularization therefrom. Surviving area of flaps treated with and without occlusive dressings was identical, suggesting that the tip of the traditional McFarlane flap survives as a free graft and calling into question previous studies which demonstrated beneficial effects of moist topical environments on flaps.</i> | Dennis C. Hammond, MD
Ronald D. Brooksher, MD |
| 205 | Dentocutaneous Fistula

<i>Dentocutaneous fistulas are the most frequent cause of draining sinus tracts of the face and neck. The anatomy, pathophysiology, and treatment are described.</i> | Patrick V. Marasco, Jr, MD
Robert G. Taylor, MD
Malcolm W. Marks, MD
Louis C. Argenta, MD |
| 211 | The Superior Dermoglandular Pedicle Approach to Breast Reduction

<i>A series of 193 breast reductions in 104 patients is presented using the superior dermoglandular pedicle technique. Advantages of the technique include safety, a sensate nipple/areola complex, and preservation of superior breast tissue.</i> | Lawrence B. Robbins, MD, FACS
Daryl K. Hoffman, MD |
| 217 | Frey's Syndrome: Prevention with Conservative Parotidectomy and Superficial Musculoaponeurotic System Preservation

<i>In 35 patients, postoperative incidence of Frey's syndrome was reduced to 6% (2 patients) by performing conservative parotidectomy with a rhytidectomy incision and SMAS preservation technique.</i> | Leonard T. Yu, MD
Ralph Hamilton, MD |

223 A Modified Occlusal Splint to Avoid Tracheotomy for Total Midface Osteotomies

Preoperative fabrication of an occlusal dental splint with a central fenestration is described, permitting passage and secure fixation of an orotracheal tube for safety in midface osteotomies.

Jeffrey C. Posnick, DMD, MD, FRCS(C),
FACS
Phillip Nakano, MD
Michael Taylor, DDS, DOrth

231 Treatment of Superficial Cutaneous Pigmented Lesions by Melanin-specific Selective Photothermolysis Using the Q-switched Ruby Laser

The Q-switched ruby laser at 694 nm in nanosecond-range pulses causes highly selective destruction of melanin-laden cells while sparing vascular structures. The laser is useful for treating superficial cutaneous pigmented lesions without creating hypertrophic scarring or alterations in normal pigmentation.

J. Stuart Nelson, MD, PhD
Jay Applebaum, MD

238 *Aeromonas hydrophila* Infections Following Use of Medicinal Leeches in Replantation and Flap Surgery

*Analysis of 18 leech-related *Aeromonas hydrophila* infections showed that leeches should be applied only to skin with demonstrated arterial perfusion and in association with specific antibiotics.*

William C. Lineaweaver, MD
Mark K. Hill, MD
Gregory M. Buncke, MD
et al

245 Postprandial *Aeromonas hydrophila* Cultures and Antibiotic Levels of Enteric Aspirates from Medicinal Leeches Applied to Patients Receiving Antibiotics

**Aeromonas hydrophila*, universally present in the foregut of the medicinal leech, was suppressed to 12% prevalence in this site following patient administration of cefotaxime before leech application, supporting a prophylactic role for antibiotics in this circumstance.*

William C. Lineaweaver, MD
Heather Furnas, MD
Stephen Follansbee, MD
et al

Case Reports

250 The Use of Medicinal Leeches in the Salvage of Flaps with Venous Congestion

Richard W. Dabb, MD
James M. Malone, MD
Larry C. Leverett, MD

257 Dorsal Thoracic Fasciocutaneous Flap Salvage of the Failed Transverse Rectus Abdominis Musculocutaneous Flap

Geoffrey G. Hallock, MD

261 Use of an Inferiorly Based Rectus Muscle Flap in Flank Wound Coverage

Peter E. Bentivegna, MD
Burt M. Greenberg, MD

263 Philtral Fistula in Median Cleft Lip: Cause and Effect or Coincidence?

Barry L. Eppley, MD, DMD
A. Michael Sadove, MD
John Goldenberg, BS

266	Umbilical Endometriosis	Hiroharu H. Igawa, MD Takehiko Ohura, MD Tsuneki Sugihara, MD et al
269	The Nasolabial Rhomboid Flap	W. Thomas Lawrence, MD, FACS
274	The Use of Gore-Tex Soft Tissue Patch to Assist Temporal Muscle Transfer in the Treatment of Facial Nerve Palsy	Y. Iwahira, MD Y. Maruyama, MD
278	Microsurgical Free Flap Transfer in Sickle Cell Disease	Robert S. Richards, MD, FRCS(C) C. Vaughan A. Bowen, MD, FRCS(C), MB, ChB M. F. X. Glynn, MD, FRCP(C)
Short Subjects		
282	A Practical Guide to International Leech Transportation	Michael Stephanides, MD Joseph M. Rosen, MD Vincent R. Hentz, MD Stanley I. Samuels, MD
Editorial		
284	The Editor's Perch	William D. Morain, MD
Letters		
285	Re: Breast Reconstruction with Tissue Expanders: Obtaining an Optimal Result	Ian T. Jackson, MD, FRCS, FACS, FRACS(Hon)
285	Reply	John E. Woods, MD
285	Re: Facial Soft-Tissue Trauma Secondary to Automobile Air Bag Injury	W. M. Cocke, Jr, MD
285	Re: Another Good Man—Gone	Peter McKinney, MD
Book Reviews		
286	<i>Modern Practice in Orthognathic and Reconstructive Surgery, Vols I and II</i>, edited by William H. Bell, DDS	Seth R. Thaller, MD
286	<i>Wound Healing: Biochemical and Clinical Aspects</i>, edited by I. Kelman Cohen, MD, Robert F. Diegelmann, PhD, and William J. Lindblad, PhD	Erle E. Peacock, Jr, MD

- 287 ***The Changing Face of Beauty*, by Sharon Romm, MD** Lars M. Vistnes, MD
- 288 ***Plastic and Reconstructive Surgery of the Orbitopalpebral Region*, by Denys Montandon, MD, Gaston F. Maillard, MD, Serge Morax, MD, and Lawrence J. Garey, MD** Linda M. Waters, MD

Number 4 / October 1992

Original Articles

- 289 **The Biomechanical Efficacy of an Oscillating K-Wire Driver** Larry S. Nichter, MD
Spencer Richlin, MS
Patricia M. Navarrette, MD
Kambiz Kosari
Biomechanical testing was used to compare an oscillating drill and a traditional rotary drill for K-wire insertion into the rabbit tibia. The oscillating drill required less force for cortical penetration and caused less damage to adjacent soft tissues.
- 293 **The Epigastric Fat Transfer: An Alternative Free Flap Model in the Rat** Barry L. Eppley, MD, DMD
Raghu Elluru, MD
Cynthia A. Brock
J. J. Coleman III, MD
A free flap of the rat epigastric fat pad is described, based on the inferior epigastric vessels via the femoral vessels. Without the usual cutaneous paddle, the flap's investigational use avoids the common problem of autocannibalization.
- 297 **Hair Removal by a Depilatory Does Not Affect Survival in Rodent Experimental Flaps** Michael F. Angel, MD
Marc Jorysz, MD
Gabriele Schieren, MD
et al
Using the McFarlane dorsal back flap, no difference was seen in surviving area with or without preexposure to a depilatory.
- 299 **Eminectomy for the Treatment of Chronic Subluxation and Recurrent Dislocation of the Temporomandibular Joint and a New Method of Patient Evaluation** Ömer Şensöz, MD
Emin Tuncay Üstüner, MD
Selim Çelebioğlu, MD
Mehmet Mutaf, MD
Bilateral eminectomies were performed on 39 patients with chronic temporomandibular subluxation and 13 patients with recurrent dislocation. Affected patients tended to have unusually high articular eminences and nearly all were relieved of symptoms postoperatively.
- 303 **Polyurethane-covered Mammary Implants: A 12-Year Experience** Carlo Gasperoni, MD
Marzia Salgarello, MD
Gabriele Gargani, MD
A 12-year experience with subglandular placement of 420 polyurethane-covered mammary implants is presented with a 7.2% complication rate, including a 3.3% capsular contracture rate and a 0.4% infection rate.

- 309 Laser Deepithelialization of the Transverse Rectus Abdominis Musculocutaneous Flap** Geoffrey G. Hallock, MD
David C. Rice, BS
- The defocused carbon dioxide laser may be used for safe, controlled, and rapid deepithelialization of the TRAM flap.*
- 314 Continuous Intraarterial Infusion of Prostaglandin E₁ and Heparin to Extend and Improve the Survival of Pedicled Musculocutaneous Flaps Through Unusual Routes: A Clinical Preliminary Report** Kiyoshi Matsuo, MD
Hideo Kushima, MD
Masahiko Noguchi, MD
et al
- Direct, continuous, intraarterial infusion of prostaglandin E₁ and heparin was carried out over 14 postoperative days via arterial side branches into 16 pedicled musculocutaneous flaps. Full survival of 15 of these "at-risk" flaps was demonstrated.*
- 321 Reconstruction of the Chest Wall with e-PTFE Following Major Resection** Peter Hyans, MD
John H. Moore, Jr, MD
Lina Sinha, MD
- Nine major chest wall reconstructions were performed using e-PTFE (Gore-Tex) soft tissue patches with muscle or omental flaps. All patients were extubated by the second postoperative day, and none showed significant change in pulmonary function, though one developed a late periprosthetic infection.*
- 328 Electrical Nerve Stimulation Improves Healing of Diabetic Ulcers** Thomas C. M. Lundeberg, MD, PhD
Sven V. Eriksson, MD
Mats Malm, MD, PhD
- A randomized, controlled study of 64 diabetic patients examined the value for stasis ulcer healing of twice-daily electrical nerve stimulation treatments delivered through the adjacent skin over a 12-week period. A statistically significant advantage was seen with electrical treatment both in percentage of healed wounds (42% vs 15%) and in final ulcer size (39% vs 59%).*
- 332 Pedicle Scapular Apophysis Transplantation in Congenital Limb Malformations** L. Teot
F. Souyris
J. P. Bosse
- A free microvascular transfer of the scapular crest with its osteocartilaginous apophysis was performed twice to the distal tibia and once to the distal radius for major congenital limb anomalies. Follow-up for 3 to 6 years demonstrated continuing appositional bone growth at the apophysis.*
- 341 Costs and Complications in Mandibular Reconstruction** Stephen S. Kroll, MD
Mark A. Schusterman, MD
Gregory P. Reece, MD
- When 5 different reconstruction patterns of mandibular defects were compared, the lowest costs and fewest complications were seen with soft-tissue repair alone. Osseous reconstruction, however, was more effective for anterior defects and demonstrated both lower costs and complication rates when performed at the time of resection and in preference to bridging plates.*

- 348 Midfacial Fractures in the Pediatric Population** Seth R. Thaller, MD, DMD, FACS
Virginia Huang, MD

A review of 53 midfacial fractures in children under 17 years of age disclosed a descending frequency of nasal bone, orbit, zygoma, maxilla, and nasoethmoid fractures. Indications for surgery and techniques used were similar to those used for adults, though often with less aggressive methods in younger children.

Case Reports

- 353 Mucosal Malignant Melanoma of the Paranasal Sinuses** Karen Joughin, MD, FRCS(C)
Oleh Antonyshyn, MD, FRCS(C)
J. Allan Myrden, MD, FRCS(C)
- 357 Intrathoracic Application of the Transverse Rectus Abdominis Musculocutaneous Flap** Geoffrey G. Hallock, MD
- 362 Tissue Expansion in a Patient with Extensive Nevus Comedonicus** Jeffrey Marcus, MD, MPH
Nancy B. Esterly, MD
Bruce S. Bauer, MD
- 367 Penicillamine-induced Pseudoxanthoma Elasticum-like Skin Changes Requiring Rhytidectomy** Gregory H. Narron, MD
Nataša Zec, MD
Rogerio I. Neves, MD
et al
- 371 Utility of the Inferior Gluteal Vessels in Free Flap Coverage of Sacral Wounds** James P. Anthony, MD
Edmond Ritter, MD
Brent R. W. Moelleken, MD

Short Subject

- 376 Nonorthopedic Use of the Fracture Table** Larry Nichter, MD
Alan Bindiger, MD
Raymond Morgan, MD

Editorial

- 378 On Not Putting Out the Sacred Fires** Mark B. Constantian, MD, FACS

Letters

- 380 Re: A New Infiltration Needle for Rapid Local Anesthesia in Retromammary Breast Augmentation** John L. Baeke, MD
- 380 Reply** Dominic A. Brandy, MD
- 380 Re: Bilateral Solitary Glomus Tumors of the Hands** Michael A. McClinton, MD

- 380 **Re: Two Devastating Complications of Carpal Tunnel Surgery** T. Shelly Ashbell, MD
- 381 **Re: Subdermal Liposuction to Enhance Skin Contraction: A Preliminary Report** B. R. Burkhardt, MD, FACS
- Book Reviews**
- 381 *Head and Neck Microsurgery*, by William M. Swartz, MD, and Joseph C. Banis, MD Gregory M. Buncke, MD
- 382 *Plastic and Reconstructive Breast Surgery*, by Gottfried Lemperle, MD, and Jurg Nievergelt, MD Jonathan N. Zelnick, MD
- 382 *The Spinal Cord-Injured Patient: Comprehensive Management*, by Bok Y. Lee, MD, Lee E. Ostrander, PhD, George Van B. Cochran, MD, ScD, and William W. Shaw, MD Inder Perkash, MD
- 383 *Atlas of Craniofacial Trauma*, by Robert H. Mathog, MD William Y. Hoffman, MD

Number 5 / November 1992

Original Articles

- 385 **Facial Video Image Processing: Standard Facial Image Capturing, Software Modification, Development of a Surgical Plan, and Comparison of Presurgical and Postsurgical Results** Richard C. Mattison, MD
- Video imaging is often superior to photography for planning and evaluating selected aesthetic surgery problems. It also enhances patient communications and educational presentations.
- 390 **Soft-Tissue Reconstruction of the Face: A Comparison of Dermal-Fat Grafting and Vascularized Tissue Transfer** Thomas G. Mordick II, MD
Don Larossa, MD
Linton Whitaker, MD
- A comparison is made between the long-term results of 8 patients with dermal-fat grafts and 8 patients with vascularized tissue transfer for facial soft-tissue augmentation. Although both produced acceptable results for mild to moderate defects, only vascularized transfers showed growth potential and sufficed for larger defects.
- 397 **Bipedicled Fasciocutaneous Flaps in the Lower Extremity** Geoffrey G. Hallock, MD
- Thirteen local bipedicled fasciocutaneous flaps were transferred in the lower extremity with a minor complication rate of 23%.

- 402 **The Chondromucosal Sleeve for the Secondary Correction of the Unilateral Cleft Lip Nasal Deformity**
The Dibbell unilateral cleft lip nasal reconstruction is expanded to a full circumferential rim incision combined with open rhinoplasty.

Julio Daniel Kirschbaum, MD
Claudio Augusto Kirschbaum, MD
- 408 **Total Reconstruction of the Hypopharynx and Cervical Esophagus: A 20-Year Experience**
A review of 148 total reconstructions of the hypopharynx and cervical esophagus using 5 standard methods demonstrated functional superiority of the free jejunal transfer as the procedure of choice. When significant resection of the thoracic esophagus was necessary, gastric transposition proved to be a suitable alternative.

Grant W. Carlson, MD
Mark A. Schusterman, MD
Oscar M. Guillamondegui, MD
- 413 **Distally Based Turnover Flap and Preputium Plasty for Distal Hypospadias Repair: A Preliminary Report**
A method is presented for repair of minimal hypospadias without chordee. Because preputial tissue is not consumed in urethral or shaft reconstruction, the aesthetic result more closely resembles the normal penis.

Fabio Santanelli, MD
- 417 **A Venous Thrombosis Technique for Experimental Thrombolytic Therapy**
A reliable method is presented for producing an experimental thrombus in the rat femoral vein. Patency redevelops in this model within 7 days.

Barry L. Eppley, MD, DMD
Steve L. Wilson, MD
Cynthia Brock
John J. Coleman III, MD
- 420 **Cutaneous Vascular Anatomy of the Thoracic Region of the Dorsum and Its Role in Flap Design in the Rat**
The skin of the dorsal thoracic region of the rat from scapula to tip of rib cage is supplied by the lateral thoracic artery. Cranially based island flaps based on this pedicle are fully reliable.

Shamsuddin Ahmed Syed, MBBS, PhD
Yukihiro Tasaki, MD
Tohru Fujii, MD
et al
- Case Reports**
- 425 **Squamous Cell Carcinoma Following Breast Augmentation, with Invited Discussions by K. Gerhard Brand, MD, and Jerry M. Rice, PhD**

Christian Paletta, MD, FACS
Francis X. Paletta, Jr, MD, FACS
Francis X. Paletta, Sr, MD, FACS
- 433 **Tissue Expansion of Sensate Skin for Pressure Sores**

Rogerio I. Neves, MD
Stephen H. Kahler, MD
Dennis R. Banducci, MD
Ernest K. Manders, MD
- 438 **Restoration of the Mandible by Full-Thickness Calvarial Bone Flap**

Takashi Kamiji, MD
Masakazu Fujikawa, MD
Tomohito Honda, MD
et al
- 444 **Misdiagnosis: A Timely Reminder**

William R. Marshall, MD
James E. Leggett, MD

446	Benign Mesodermal Tumors Producing Nasal Deformity	Otto J. Placik, MD Richard Lim, MD Victor L. Lewis, Jr, MD B. Herold Griffith, MD
450	Reconstruction of Facial Contour Deformity with the Buccal Fat Pad Flap	Stephen M. Herring, DDS, MD
454	Abdominoplasty Following Colostomy	Alan D. Widgerow, FCS, (SA)Plast, MMed, (Wits)Plast
457	Prediction of Nipple Viability Following Reduction Mammoplasty Using Laser Doppler Flowmetry	Geoffrey G. Hallock, MD
461	The Use of Bifid Nasolabial Flaps in the Reconstruction of the Nose and Columella	İbrahim Özküş, MD Deniz I. Çek, MD Kaya Özküş, MD
464	Lower Facial Recontouring in Craniofacial Asymmetry	Barry L. Eppley, MD, DMD Raghu Elluru, MD A. Michael Sadove, MD
Short Subjects		
469	Nasal Tampon Packing in Rhinoplasty: A Simple and Safe Method of Hemostasis	S. N. Lusthaus, MD P. Benmeir, MD A. Neuman, MD et al
471	Vector-running Subcuticular Sutures in High-Tension and High-Mobility Areas	Paul J. Weber, MD Allan E. Wulc, MD
Editorial		
474	Of Elephants and Periprosthetic Cancers	William D. Morain, MD
Letters		
476	Re: Structure and Construction: The System of Skin Flaps	Eduardo Ciarrochi, MD
476	Reply	P. Kunert, MD
477	Re: The Polyurethane Foam Covering the Mème Breast Prosthesis: A Biomedical Breakthrough or a Biomaterial Tar Baby?	J. Paul Santerre, PhD Rosalind S. Labow, PhD George A. Adams, PhD
477	Reply	Robert Guidoin, PhD Martin W. King, PhD

- 478 **Re: Giant Melanoma of the Inner Thigh: A Homeopathic Life-threatening Negligence**
Book Reviews
 F. J. Escudero Nafs
 A. Guinot Madrdejos
 I. Solano Carreira
 I. Beltrán de Heredia
- 478 *Clinics in Plastic Surgery, "Reconstruction of the Lower Extremity,"* edited by R. Jobe Fix, MD, and Luis O. Vasconez, MD
 Douglas J. Ramos, MD
- 479 *1992 Yearbook of Plastic, Reconstructive and Aesthetic Surgery,* edited by Stephen H. Miller, MD
 Robert W. Parsons, MD
- 479 *Local Flaps and Free Skin Grafts in Head and Neck Reconstruction,* edited by Janusz Bardach, MD
 William C. Trier, MD
- 480 *Management of Salivary Gland Lesions,* edited by Mark S. Granick, MD, and Dwight C. Hanna III, MD
 Peter Calamel

Number 6 / December 1992

- 481 **Guest Editor's Introduction to the Medical College of Wisconsin Issue**
 David L. Larson, MD, FACS

Original Articles

- 482 **The Transverse Gracilis Musculocutaneous Flap**
 A dissection study of 24 cadaver thighs demonstrated a wide transverse distribution of the proximal perforating vessels from the gracilis muscle. This permits harvesting of a musculocutaneous flap with a large transverse skin paddle for breast or other complex reconstruction.
 N. John Yousif, MD
 Hani S. Matloub, MD
 Ramachandra Kolachalam, MD
 et al
- 491 **The Occipital Artery Flap for Transfer of Hair-bearing Tissue**
 Through fresh cadaver dissections, the authors found that a large branch of the occipital artery traverses the midline. Free transfers of large 20-cm occipital scalp flaps were performed for successful treatment of baldness.
 Hani S. Matloub, MD
 N. John Yousif, MD
 Zhong Ye, MD
 James R. Sanger, MD
- 496 **The Composite Lateral Arm Free Flap: Vascular Relationship to Triceps Tendon and Muscle**
 As 16 fresh cadaver dissections demonstrated that vascularity to the triceps tendon passes from the posterior radial collateral artery through the triceps muscle, a composite lateral arm free flap of skin and triceps tendon/muscle was designed. The flap was used to close 6 complex defects, 3 requiring skin and tendon reconstruction; no deficit in donor elbow extension resulted.
 Arun K. Gosain, MD
 Hani S. Matloub, MD
 N. John Yousif, MD
 James R. Sanger, MD

- 508 **Characteristics of Prosthetic Mesh and Autogenous Fascia in Abdominal Wall Reconstruction after Prolonged Implantation**
A 1-year study of abdominal wall reconstruction in 24 rats demonstrated superiority of autogenous fascia over Gore-Tex patch and Marlex mesh in suture line strength and in paucity of adhesions, although the fascia's tensile strength was less than that of the prosthetics.

Hani S. Matloub, MD
Paul Jensen, MD
Brad K. Grunert, PhD
et al

- 512 **Coverage of Widely Separate Defects of the Lower Extremity: Application of Cluster Analysis**
A mathematical analysis of cluster patterns of cutaneous perforating arteries in the radial forearm flap was based on latex-injection studies. This permitted execution of a complex two-part foot reconstruction with a single radial forearm flap via a single artery.

N. John Yousif, MD
Christopher D. Prevel, MD
Zhong Ye, MD
et al

- 517 **The Medial Arm Flap**
Injection studies in 40 fresh cadaver arms demonstrated the superior ulnar collateral artery to be the dominant vessel in 80% of cases. Ten consecutive successful free medial arm flaps based on this vessel were transferred to distant sites.

Hani S. Matloub, MD
Zhong Ye, MD
N. John Yousif, MD
James R. Sanger, MD

- 523 **The Versatile Metacarpal and Reverse Metacarpal Artery Flaps in Hand Surgery**
Injection studies of 22 fresh cadaver hands showed the presence of 5 dorsal metacarpal arteries, the largest coursing into the second interspace. Six clinical cases are presented using flaps based both proximally and distally on the second artery.

N. John Yousif, MD
Zhong Ye, MD
James R. Sanger, MD
et al

- 532 **Graded Work Exposure to Promote Work Return after Severe Hand Trauma: A Replicated Study**
Fifty-one patients with posttraumatic stress disorder following work-related hand injuries were treated with a graded work exposure program. At 6 months, over 80% of the patients had returned to their previous employment.

Brad K. Grunert, PhD
Cecilia A. Devine, OTR
Cindy J. Smith, OTR
et al

- 537 **Psychological Adjustment Following Work-related Hand Injury: 18-Month Follow-up**
Psychological evaluation was performed routinely on 170 patients suffering severe, work-related hand injuries. Many debilitating symptoms continued 18 months after injury in cognitive, affective, physiological, and behavioral areas.

Brad K. Grunert, PhD
Cecilia A. Devine, OTR
Hani S. Matloub, MD
et al

- 543 **Creating a Hyperbaric Oxygen Treatment Unit in a Major Medical Center: A Personal Experience**
The author describes the advantages, problems, and pitfalls in establishing an institutional hyperbaric oxygen treatment unit.

Eric P. Kindwall, MD

Case Reports

- | | | |
|-----|---|---|
| 550 | Comprehensive Correction of the Craniofacial Deformity in Achondroplastic Dwarfism | Arlen D. Denny, MD
David J. Gingrass, DDS
Donald J. Ferguson, DMD |
| 559 | Tire Explosion Injuries to the Upper Extremity | Hani S. Matloub, MD
Christopher D. Prevel, MD
James R. Sanger, MD
et al |
| 564 | Self-inflicted Midline Facial Gunshot Wounds: The Case for a Combined Craniofacial and Microvascular Team Approach | Arlen D. Denny, MD
James R. Sanger, MD
Hani S. Matloub, MD
N. John Yousif, MD |
| 571 | Toxic Shock Syndrome Following Latissimus Dorsi Musculocutaneous Flap Breast Reconstruction | Arun K. Gosain, MD
David L. Larson, MD, FACS |
| 576 | Expanded Midline Forehead Flap for Coverage of Nonnasal Facial Defects | Arlen D. Denny, MD |
| 579 | Penile Replantation after Self-inflicted Amputation | James R. Sanger, MD
Hani S. Matloub, MD
N. John Yousif, MD
Frank P. Begun, MD |
| 585 | Transfer of an Inferior Rectus Abdominis Myocutaneous Flap Following Enterostomy | Philip L. Sonderman, MD
James R. Sanger, MD
N. John Yousif, MD
Hani S. Matloub, MD |

Editorial

- | | | |
|-----|-------------------------|-----------------------|
| 587 | Natvig's Blanket | William D. Morain, MD |
|-----|-------------------------|-----------------------|

Indexes to Volume 29

- | | |
|-----|----------------------|
| 588 | Author Index |
| 590 | Subject Index |

